

Chemical Analysis Report

NE-DIST-2021-09-01-01

Florida Department of Environmental Protection
Central Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

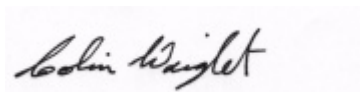
Event Description: **Nassau North Boat**
Request ID: **RQ-2021-08-30-15**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Suite 100
Jacksonville, FL 32256
Attn: Jeremy Parrish

For additional information please contact
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Certified by: Colin Wright, Program Administrator

Date Certified: 24-SEP-2021 14:11



NON-CONFORMANCE REPORT INCLUDED

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical groups are included in this report: Metals and Nutrients.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited by the Florida Department of Health Environmental Laboratory Certification Program or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: Plummer Creek @ Second Island

Collection Date/Time: 08/31/2021 10:05

Field ID: G4NE0301

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2273066	EPA 180.1 Rev. 2.0	Turbidity	8.3		NTU	P403273	
	SM 2320 B-2011	Total Alkalinity	16		mg CaCO3/L	P403382	
	SM 2540 D-2011	TSS	13		mg/L	P403568	
	SM 4500 F-C-2011	Fluoride	0.064	I	mg F/L	P403385	
2273067	EPA 350.1 Rev. 2.0	Ammonia-N	0.021		mg N/L	P403361	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P403449	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.029		mg N/L	P403296	
	EPA 365.1 Rev. 2.0	Total-P	0.087		mg P/L	P403328	
	SM 5310 B-2011	Organic Carbon	35		mg C/L	P403548	
2273068	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.046		mg P/L	P403276	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries and relative percent difference are unavailable because of analytical difficulties.

EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: SMR 3.2mi S Tracy Rd.

Collection Date/Time: 08/31/2021 11:45

Field ID: 19010157

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2273102	EPA 200.7 Rev. 4.4	Barium	16.3		ug/L	P403326	
		Calcium	3.23		mg/L	P403326	
		Iron	2.05E+03		ug/L	P403326	
		Magnesium	0.99		mg/L	P403326	
		Manganese	17.3		ug/L	P403326	
		Potassium	0.41	I	mg/L	P403326	
		Sodium	3.3		mg/L	P403326	
	EPA 200.8 Rev. 5.4	Zinc	5.4	I	ug/L	P403326	
		Aluminum	750		ug/L	P403326	
		Antimony	0.050	I	ug/L	P403326	
		Arsenic	0.67		ug/L	P403326	
		Beryllium	0.045		ug/L	P403326	
		Boron**	16.2		ug/L	P403326	
		Cadmium	0.020	U	ug/L	P403326	
		Chromium	0.89	I	ug/L	P403326	
		Copper	0.40	U	ug/L	P403326	
		Lead	1.11		ug/L	P403326	
		Nickel	0.76	I	ug/L	P403326	
		Selenium	0.20	U	ug/L	P403326	
		Silver	0.010	U	ug/L	P403326	
		Thallium	0.10	U	ug/L	P403326	
	SM 2340B	Hardness	12.1		mg/L	P403326	

Ref. Method and Comment:

EPA 200.8 Rev. 5.4: The lead result was confirmed in the undigested sample on 09/09/2021.

Sample Location: SMR 0.3mi S Tracy Rd.

Collection Date/Time: 08/31/2021 12:00

Field ID: 19010156

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2273069	EPA 180.1 Rev. 2.0	Turbidity	4.3		NTU	P403273	
	EPA 300.0 Rev. 2.1	Chloride	5.1		mg Cl/L	P404146	
		Sulfate	0.45	I	mg SO4/L	P404147	
		Total Alkalinity	0.65	U	mg CaCO3/L	P403382	
	SM 2320 B-2011	TSS	5	IA	mg/L	P403570	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P403385	
2273070	EPA 350.1 Rev. 2.0	Ammonia-N	0.041		mg N/L	P403361	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P403449	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.015		mg N/L	P403296	
	EPA 365.1 Rev. 2.0	Total-P	0.056		mg P/L	P403323	
	SM 5310 B-2011	Organic Carbon	42		mg C/L	P403548	
2273071	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.026		mg P/L	P403276	
2273101	EPA 200.7 Rev. 4.4	Barium	15.6		ug/L	P403326	
		Calcium	3.18		mg/L	P403326	
		Iron	2.04E+03		ug/L	P403326	
		Magnesium	0.99		mg/L	P403326	
		Manganese	16.5		ug/L	P403326	
		Potassium	0.43	I	mg/L	P403326	
		Sodium	3.3		mg/L	P403326	
		Zinc	5.3	I	ug/L	P403326	
	EPA 200.8 Rev. 5.4	Aluminum	698		ug/L	P403326	
		Antimony	0.050	U	ug/L	P403326	
		Arsenic	0.66		ug/L	P403326	
		Beryllium	0.044		ug/L	P403326	
		Boron**	15.6		ug/L	P403326	
		Cadmium	0.020	U	ug/L	P403326	
		Chromium	1.0	I	ug/L	P403326	
		Copper	0.40	U	ug/L	P403326	
		Lead	1.08		ug/L	P403326	
		Nickel	0.73	I	ug/L	P403326	
		Selenium	0.20	U	ug/L	P403326	
		Silver	0.010	U	ug/L	P403326	
		Thallium	0.10	U	ug/L	P403326	
	SM 2340B	Hardness	12.0		mg/L	P403326	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries and relative percent difference are unavailable because of analytical difficulties.

EPA 200.8 Rev. 5.4: The lead result was confirmed in the undigested sample on 09/09/2021.

Sample Location: Field Blank

Collection Date/Time: 08/31/2021 12:05

Field ID: FB-08312021

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2273072	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P403273	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P403407	
		Sulfate	0.20	U	mg SO4/L	P403409	
		Color (true)	2.5	U	PCU	P403274	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P403382	
	SM 2540 C-2011	TDS	15	U	mg/L	P403572	
	SM 2540 D-2011	TSS	2	U	mg/L	P403568	
2273073	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P403385	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P403361	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P403417	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P403297	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P403328	
2273074	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P403548	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P403276	
2273103	EPA 200.7 Rev. 4.4	Barium	1.0	U	ug/L	P403326	
		Calcium	0.075	U	mg/L	P403326	
		Iron	30	U	ug/L	P403326	
		Magnesium	0.040	U	mg/L	P403326	
		Manganese	1.0	U	ug/L	P403326	
		Potassium	0.30	U	mg/L	P403326	
		Sodium	0.50	U	mg/L	P403326	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P403326	
		Aluminum	5.0	U	ug/L	P403326	
		Antimony	0.050	U	ug/L	P403326	
		Arsenic	0.050	U	ug/L	P403326	
		Beryllium	0.010	U	ug/L	P403326	
		Boron**	2.0	U	ug/L	P403326	
		Cadmium	0.020	U	ug/L	P403326	
		Chromium	0.40	U	ug/L	P403326	
		Copper	0.40	U	ug/L	P403326	
		Lead	0.20	U	ug/L	P403326	
		Nickel	0.50	U	ug/L	P403326	
		Selenium	0.20	U	ug/L	P403326	
		Silver	0.010	U	ug/L	P403326	
		Thallium	0.10	U	ug/L	P403326	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Non-Conformance Report

NCR ID: 9047

<u>Event(s)</u>	<u>Job(s)</u>	<u>Sample(s)</u>	<u>Test(s)</u>
NE-DIST-2021-09-01-01	TLH-2021-09-01-39	2273066	
NE-DIST-2021-09-01-01	TLH-2021-09-01-39	2273067	
NE-DIST-2021-09-01-01	TLH-2021-09-01-39	2273068	
NE-DIST-2021-09-01-01	TLH-2021-09-01-39	2273069	
NE-DIST-2021-09-01-01	TLH-2021-09-01-39	2273070	
NE-DIST-2021-09-01-01	TLH-2021-09-01-39	2273071	

NCR Type: SHIPPING/RECEIVING

NCR Category: Receiving

Observation: During review of analytical results it was found that some sample bottles were mislabelled at login.

Resolution: Labelling error was corrected on 09/23/2021 at 09:25.

Because of the mislabel, TDS and Color (true) had not been analyzed for the sample with Field ID 19010156 and the expiration date had been exceeded. The customer was informed and elected that the tests be cancelled rather than report qualified results.

Authorized by/Date: Colin Wright 9/24/2021

The Non-Conformance Report details exceptions or problems encountered with the events/jobs/samples/test.
Please address questions to:

Chemistry	Colin Wright	(850) 245-8085
Biology	Cheryl Swanson	(850) 245-8177

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P403273

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P403326

Component	Result	Code	Units
Barium	1.0	U	ug/L
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Manganese	1.0	U	ug/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P403326

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Beryllium	0.010	U	ug/L
Boron	2.0	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P403407

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P403409

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P404146

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P404147

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P403361

Component	Result	Code	Units
Ammonia-N	0.002	U	mg N/L

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403417

Component	Result	Code	Units
Kjeldahl Nitrogen	0.080	U	mg N/L

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403449

Component	Result	Code	Units
Kjeldahl Nitrogen	0.080	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P403296

Component	Result	Code	Units
NO2NO3-N	0.004	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P403297

Component	Result	Code	Units
NO2NO3-N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P403323

Component	Result	Code	Units
Total-P	0.002	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P403328

Component	Result	Code	Units
Total-P	0.002	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P403276

Component	Result	Code	Units
O-Phosphate-P	0.004	U	mg P/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2120 B-2011
Batch ID: P403274

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P403382

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2540 C-2011
Batch ID: P403572

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P403568

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P403570

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P403385

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P403548

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P403326

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	101		P	85 - 115
Calcium	102		P	85 - 115
Iron	106		P	85 - 115
Magnesium	107		P	85 - 115
Manganese	103		P	85 - 115
Potassium	101		P	85 - 115
Sodium	99.4		P	85 - 115
Zinc	100		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P403326

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	97.9		P	85 - 115
Antimony	103		P	85 - 115
Arsenic	99.0		P	85 - 115
Beryllium	100		P	85 - 115
Boron	95.1		P	85 - 115
Cadmium	96.0		P	85 - 115
Chromium	101		P	85 - 115
Copper	101		P	85 - 115
Lead	103		P	85 - 115
Nickel	99.9		P	85 - 115
Selenium	99.4		P	85 - 115
Silver	110		P	85 - 115
Thallium	103		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P403407

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	99.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P403409

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	98.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P404146

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	97.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P404147

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	97.3		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P403361

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403417

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	91.3		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403449

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	103		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P403296

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	97.5		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P403297

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	96.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P403323

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	106		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P403328

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	104		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P403276

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.8		P	90 - 110

Reference Method: SM 2120 B-2011
Batch ID: P403274

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.8		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-2011
Batch ID: P403382

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	94 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P403385

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.2		P	93 - 104

Reference Method: SM 5310 B-2011
Batch ID: P403548

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.4		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P403326

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2273156	Barium	104	102	P/P	80 - 120
2273156	Calcium	104		P	80 - 120
2273156	Iron	111	107	P/P	80 - 120
2273156	Magnesium	112	108	P/P	80 - 120
2273156	Manganese	105	101	P/P	80 - 120
2273156	Potassium	105	101	P/P	80 - 120
2273156	Sodium	107	105	P/P	80 - 120
2273156	Zinc	105	104	P/P	80 - 120
2273239	Barium	104		P	80 - 120
2273239	Calcium	107		P	80 - 120
2273239	Iron	109		P	80 - 120
2273239	Magnesium	109		P	80 - 120
2273239	Manganese	105		P	80 - 120
2273239	Potassium	101		P	80 - 120
2273239	Sodium	103		P	80 - 120
2273239	Zinc	113		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P403326

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2273156	Aluminum	100	97.1	P/P	80 - 120
2273156	Antimony	105	102	P/P	80 - 120
2273156	Arsenic	99.0	96.1	P/P	80 - 120
2273156	Beryllium	101	97.3	P/P	80 - 120
2273156	Boron	97.5	95.8	P/P	80 - 120
2273156	Cadmium	98.5	96.1	P/P	80 - 120
2273156	Chromium	104	99.8	P/P	80 - 120
2273156	Copper	100	95.6	P/P	80 - 120
2273156	Lead	104	101	P/P	80 - 120
2273156	Nickel	99.9	95.3	P/P	80 - 120
2273156	Selenium	98.1	95.6	P/P	80 - 120
2273156	Silver	108	108	P/P	80 - 120
2273156	Thallium	106	103	P/P	80 - 120
2273239	Aluminum	99.7		P	80 - 120
2273239	Antimony	106		P	80 - 120
2273239	Arsenic	100		P	80 - 120
2273239	Beryllium	97.3		P	80 - 120
2273239	Boron	99.6		P	80 - 120
2273239	Cadmium	98.0		P	80 - 120
2273239	Chromium	102		P	80 - 120
2273239	Copper	97.3		P	80 - 120
2273239	Lead	105		P	80 - 120
2273239	Nickel	97.5		P	80 - 120
2273239	Selenium	96.4		P	80 - 120
2273239	Silver	104		P	80 - 120
2273239	Thallium	107		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P403407

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P403407

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2272421	Chloride	97.5		P	90 - 110
2272891	Chloride	97.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P403409

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2272421	Sulfate	98.0		P	90 - 110
2272891	Sulfate	98.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P404146

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2277057	Chloride	95.3		P	90 - 110
2277424	Chloride	99.0		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P404147

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2277057	Sulfate	95.8		P	90 - 110
2277424	Sulfate	98.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P403361

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2273162	Ammonia-N	97.2	97.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403417

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2273028	Kjeldahl Nitrogen	97.4	97.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P403296

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2273003	NO2NO3-N	97.0	96.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P403297

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2273114	NO2NO3-N	94.8	94.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P403323

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P403323

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2273025	Total-P	107	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P403276

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2273068	O-Phosphate-P	100	98.9	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P403385

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2273021	Fluoride	99.6	99.6	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P403548

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2272182	Organic Carbon	99.8	97.5	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P403273

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2273023	Turbidity	3.73	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P403326

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2273156	Barium	1.82	Spike	P	0 - 20
2273156	Calcium	3.89	Spike	P	0 - 20
2273156	Iron	3.32	Spike	P	0 - 20
2273156	Magnesium	3.21	Spike	P	0 - 20
2273156	Manganese	2.70	Spike	P	0 - 20
2273156	Potassium	3.50	Spike	P	0 - 20
2273156	Sodium	1.29	Spike	P	0 - 20
2273156	Zinc	1.14	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P403326

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2273156	Aluminum	3.02	Spike	P	0 - 20
2273156	Antimony	2.82	Spike	P	0 - 20
2273156	Arsenic	2.95	Spike	P	0 - 20
2273156	Beryllium	3.35	Spike	P	0 - 20
2273156	Boron	1.69	Spike	P	0 - 20
2273156	Cadmium	2.45	Spike	P	0 - 20
2273156	Chromium	4.05	Spike	P	0 - 20
2273156	Copper	4.65	Spike	P	0 - 20
2273156	Lead	3.08	Spike	P	0 - 20
2273156	Nickel	4.69	Spike	P	0 - 20
2273156	Selenium	2.56	Spike	P	0 - 20
2273156	Silver	0.248	Spike	P	0 - 20
2273156	Thallium	2.60	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P403407

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2272421	Chloride	0.345	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P403409

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2272421	Sulfate	0.156	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P404146

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2277057	Chloride	0.286	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P404147

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2277057	Sulfate	0.485	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P403361

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2273162	Ammonia-N	0.0	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403417

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2273028	Kjeldahl Nitrogen	0.114	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P403296

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2273003	NO2NO3-N	0.277	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P403297

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2273114	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P403323

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2273025	Total-P	0.333	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P403328

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2273116	Total-P	0.410	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P403276

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2273068	O-Phosphate-P	0.757	Spike	P	0 - 20

Reference Method: SM 2120 B-2011
Batch ID: P403274

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2272891	Color (true)	0.735	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P403382

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2273021	Total Alkalinity	0.879	Sample	P	0 - 5.2

Reference Method: SM 2540 C-2011
Batch ID: P403572

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2273023	TDS	5.53	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P403385

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2273021	Fluoride	0.0	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
Batch ID: P403548

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2272182	Organic Carbon	1.96	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A107600

Included Lab Sample IDs: 2273066, 2273069, 2273072

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	101	100	P/P	95 - 105

Reference Method: SM 2120 B-2011

Run ID: A107601

Included Lab Sample IDs: 2273072

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	101	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A107602

Included Lab Sample IDs: 2273068, 2273071, 2273074

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.0	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A107613

Included Lab Sample IDs: 2273067, 2273070, 2273073

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	97.5	98.5	P/P	90 - 110
NO2NO3-N	98.0	97.5	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A107634

Included Lab Sample IDs: 2273072

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	99.9	P/P	90 - 110
Sulfate	100	99.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A107637

Included Lab Sample IDs: 2273073

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	96.8	95.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A107638

Included Lab Sample IDs: 2273070

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	103	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A107641

Included Lab Sample IDs: 2273067, 2273070, 2273073

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A107641

Included Lab Sample IDs: 2273067, 2273070, 2273073

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.4	99.0	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A107650

Included Lab Sample IDs: 2273066, 2273069, 2273072

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	103	99.8	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A107650

Included Lab Sample IDs: 2273066, 2273069, 2273072

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	102	102	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A107666

Included Lab Sample IDs: 2273101, 2273102, 2273103

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	97.4	98.0	P/P	90 - 110
Aluminum	98.5	97.4	P/P	90 - 110
Antimony	101	101	P/P	90 - 110
Antimony	101	100	P/P	90 - 110
Arsenic	97.6	95.1	P/P	90 - 110
Arsenic	99.3	97.6	P/P	90 - 110
Beryllium	95.6	94.0	P/P	90 - 110
Beryllium	99.2	95.6	P/P	90 - 110
Boron	94.9	95.6	P/P	90 - 110
Boron	95.6	99.4	P/P	90 - 110
Cadmium	95.3	96.4	P/P	90 - 110
Cadmium	96.4	95.6	P/P	90 - 110
Chromium	99.2	99.3	P/P	90 - 110
Chromium	99.3	97.4	P/P	90 - 110
Copper	94.2	92.5	P/P	90 - 110
Copper	97.7	94.2	P/P	90 - 110
Lead	97.9	97.8	P/P	90 - 110
Lead	99.5	97.9	P/P	90 - 110
Nickel	95.5	92.2	P/P	90 - 110
Nickel	97.6	95.5	P/P	90 - 110
Selenium	96.2	94.1	P/P	90 - 110
Selenium	97.7	96.2	P/P	90 - 110
Thallium	101	102	P/P	90 - 110
Thallium	102	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A107674

Included Lab Sample IDs: 2273073

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A107674

Included Lab Sample IDs: 2273073

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.2	97.8	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A107686

Included Lab Sample IDs: 2273101, 2273102, 2273103

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Silver	95.0	93.7	P/P	90 - 110
Silver	95.0	95.0	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A107687

Included Lab Sample IDs: 2273101, 2273102, 2273103

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	96.4	99.0	P/P	90 - 110
Barium	96.6	96.4	P/P	95 - 105
Calcium	102	102	P/P	95 - 105
Calcium	102	102	P/P	90 - 110
Iron	101	101	P/P	95 - 105
Iron	101	101	P/P	90 - 110
Magnesium	101	101	P/P	95 - 105
Magnesium	101	101	P/P	90 - 110
Manganese	102	103	P/P	95 - 105
Manganese	103	104	P/P	90 - 110
Potassium	99.0	97.9	P/P	90 - 110
Potassium	99.2	99.0	P/P	95 - 105
Sodium	101	99.2	P/P	90 - 110
Sodium	101	101	P/P	95 - 105
Zinc	98.2	99.8	P/P	95 - 105
Zinc	99.8	106	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A107697

Included Lab Sample IDs: 2273067, 2273070

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	100	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A107704

Included Lab Sample IDs: 2273067, 2273070, 2273073

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.0	97.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A107729

Included Lab Sample IDs: 2273067

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A107729

Included Lab Sample IDs: 2273067

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	100	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A107953

Included Lab Sample IDs: 2273069

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.6	99.9	P/P	90 - 110
Sulfate	99.6	99.8	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						3.73	
EPA 200.7 Rev. 4.4	Barium	101	104	102	104			1.82
	Calcium	102	104	107				3.89
	Iron	106	111	107	109			3.32
	Magnesium	107	112	108	109			3.21
	Manganese	103	105	101	105			2.70
	Potassium	101	105	101	101			3.50
	Sodium	99.4	107	105	103			1.29
	Zinc	100	105	104	113			1.14
EPA 200.8 Rev. 5.4	Aluminum	97.9	100	97.1	99.7			3.02
	Antimony	103	105	102	106			2.82
	Arsenic	99.0	99.0	96.1	100			2.95
	Beryllium	100	101	97.3	97.3			3.35
	Boron	95.1	97.5	95.8	99.6			1.69
	Cadmium	96.0	98.5	96.1	98.0			2.45
	Chromium	101	104	99.8	102			4.05
	Copper	101	100	95.6	97.3			4.65
	Lead	103	104	101	105			3.08
	Nickel	99.9	99.9	95.3	97.5			4.69
	Selenium	99.4	98.1	95.6	96.4			2.56
	Silver	110	108	108	104			0.248
	Thallium	103	106	103	107			2.60
EPA 300.0 Rev. 2.1	Chloride	99.3	97.5	97.3			0.345	
	Chloride	97.8	95.3	99.0			0.286	
	Sulfate	98.3	98.0	98.4			0.156	
	Sulfate	97.3	95.8	98.1			0.485	
EPA 350.1 Rev. 2.0	Ammonia-N	99.4	97.2	97.2				0.0
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	91.3	97.4	97.2				0.114
	Kjeldahl Nitrogen	103						
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	97.5	97.0	96.5				0.277
	NO ₂ NO ₃ -N	96.5	94.8	94.8				0.0
EPA 365.1 Rev. 2.0	Total-P	106	107	107				0.333
	Total-P	104						0.410
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.8	100	98.9				0.757
SM 2120 B-2011	Color (true)	99.8					0.735	
SM 2320 B-2011	Total Alkalinity	103					0.879	
SM 2540 C-2011	TDS						5.53	
SM 4500 F-C-2011	Fluoride	98.2	99.6	99.6				0.0
SM 5310 B-2011	Organic Carbon	94.4	99.8	97.5				1.96

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2273066, 2273069, 2273072
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2273101, 2273102, 2273103
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2273101, 2273102, 2273103
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2273069, 2273072
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2273069, 2273072
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2273067, 2273070, 2273073
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2273067, 2273070, 2273073
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2273067, 2273070, 2273073

Reference Method Descriptions

Method	Description	Associated Samples
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2273067, 2273070, 2273073
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2273068, 2273071, 2273074
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2273072
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2273066, 2273069, 2273072
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2273101, 2273102
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2273072
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2273066, 2273069, 2273072
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2273066, 2273069, 2273072
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2273067, 2273070, 2273073

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	09/01/2021			09/01/2021 14:45	Sarah A Nixon	2273066, 2273069, 2273072
EPA 200.7 Rev. 4.4	09/01/2021	09/02/2021 15:05	Elliott D. Healy	09/08/2021 12:21	Josef B Mick	2273103
	09/01/2021	09/02/2021 15:05	Elliott D. Healy	09/08/2021 14:01	Josef B Mick	2273101
	09/01/2021	09/02/2021 15:05	Elliott D. Healy	09/08/2021 14:07	Josef B Mick	2273102
EPA 200.8 Rev. 5.4	09/01/2021	09/02/2021 15:05	Elliott D. Healy	09/03/2021 15:17	McKinley C Carter	2273103
	09/01/2021	09/02/2021 15:05	Elliott D. Healy	09/03/2021 17:41	McKinley C Carter	2273101
	09/01/2021	09/02/2021 15:05	Elliott D. Healy	09/03/2021 17:50	McKinley C Carter	2273102
	09/01/2021	09/02/2021 15:05	Elliott D. Healy	09/08/2021 17:19	Alexander Thompson	2273103
	09/01/2021	09/02/2021 15:05	Elliott D. Healy	09/08/2021 18:43	Alexander Thompson	2273101
	09/01/2021	09/02/2021 15:05	Elliott D. Healy	09/08/2021 18:49	Alexander Thompson	2273102
EPA 300.0 Rev. 2.1	09/01/2021			09/03/2021 19:25	Roberta Tatti	2273072
	09/01/2021			09/23/2021 19:13	Roberta Tatti	2273069
EPA 350.1 Rev. 2.0	09/01/2021			09/03/2021 12:36	Ping Hua	2273070
	09/01/2021			09/03/2021 12:38	Ping Hua	2273067
	09/01/2021			09/03/2021 12:46	Ping Hua	2273073
EPA 351.2 Rev. 2.0	09/01/2021	09/07/2021 12:14	Benjamin T. Nordmann	09/08/2021 10:11	Alexandra J Mattheus	2273073
	09/01/2021	09/08/2021 16:15	Benjamin T. Nordmann	09/09/2021 12:28	Alexandra J Mattheus	2273070
	09/01/2021	09/08/2021 16:15	Benjamin T. Nordmann	09/09/2021 12:30	Alexandra J Mattheus	2273067
EPA 353.2 Rev. 2.0	09/01/2021			09/02/2021 10:17	Beverly Y. Sanders	2273070
	09/01/2021			09/02/2021 10:19	Beverly Y. Sanders	2273067
	09/01/2021			09/02/2021 10:38	Beverly Y. Sanders	2273073
EPA 365.1 Rev. 2.0	09/01/2021	09/02/2021 14:00	Simonne.V. Calhoun	09/03/2021 10:29	Shengyu Ding	2273070
	09/01/2021	09/02/2021 14:00	Simonne.V. Calhoun	09/03/2021 11:11	Shengyu Ding	2273073
	09/01/2021	09/02/2021 14:00	Simonne.V. Calhoun	09/10/2021 11:46	Lipi Saha	2273067
EPA 365.1 Rev. 2.0 dissolved	09/01/2021			09/01/2021 16:22	James L Waggeberby	2273068
	09/01/2021			09/01/2021 16:24	James L Waggeberby	2273071
	09/01/2021			09/01/2021 16:25	James L Waggeberby	2273074
SM 2120 B-2011	09/01/2021			09/01/2021 15:36	Sarah A Nixon	2273072
SM 2320 B-2011	09/01/2021			09/02/2021 16:48	Dale L. Simmons	2273069
	09/01/2021			09/02/2021 17:00	Dale L. Simmons	2273066
	09/01/2021			09/02/2021 17:18	Dale L. Simmons	2273072
SM 2340B	09/01/2021			09/08/2021 14:01	Josef B Mick	2273101
	09/01/2021			09/08/2021 14:07	Josef B Mick	2273102
SM 2540 C-2011	09/01/2021			09/03/2021 14:31	Yijie Li	2273072
SM 2540 D-2011	09/01/2021			09/03/2021 14:31	Yijie Li	2273066, 2273069, 2273072
SM 4500 F-C-2011	09/01/2021			09/02/2021 16:48	Dale L. Simmons	2273069
	09/01/2021			09/02/2021 17:00	Dale L. Simmons	2273066
	09/01/2021			09/02/2021 17:18	Dale L. Simmons	2273072
SM 5310 B-2011	09/01/2021			09/08/2021 21:40	Madeline Gruver	2273070
	09/01/2021			09/08/2021 21:53	Madeline Gruver	2273067

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-2011	09/01/2021			09/08/2021 22:09	Madeline Gruver	2273073